Unconscious bias and primary schools

Carol Davenport outlines the possible influence of unconscious bias on primary science

First a riddle:
A father and his son are in an accident. Badly injured, they are rushed to hospital. In the operating room the surgeon looks at the boy and says, 'I can't operate on this boy, he is my son'.
Who is the surgeon?

Growing up, you probably had an image of a surgeon in your head. An image that you haven't ever thought about deeply, but in all likelihood it was an image of a male surgeon. And that mental linkage of 'surgeon = male' means that a lot of people struggle to give the most statistically likely answer to the riddle: that the surgeon is the child's mother.

Two thinking systems

The above is an example of unconscious bias. We can think of unconscious biases as the shortcuts our brains take to make our lives easier. Psychologists Daniel Kahneman (2011) and Amos Tversky (who died prior to publication) explain that unconscious biases arise because we have two thinking systems: a fast, automatic (unconscious) system and a slower more deliberative (conscious) system.

You can think of the first system as the one that helped humanity to respond rapidly to threats and deal with lots of information. It is the system that helps us to make 'snap decisions' such as jumping when we see a spider run across the floor. It is also the system that helps us to do more complicated activities such as driving: we can automatize some of the decisions and actions required.

The second thinking system takes more effort and is slower; it is the system we use when we are marking a piece of writing or buying a computer. If we had to put as much time and effort into all the decisions we have to make then we would have to spend a lot more time thinking in our day-to-day life.

How the automatic system leads to unconscious biases

The automatic system uses 'rules of thumb' or heuristics to help process information and make decisions. Unfortunately, these heuristics can be wrong and are what lead to unconscious biases. A lot of biases have been studied and named: over 150 are listed on *Wikipedia* (2020). For example, the 'halo effect' (Forgas and Laham, 2016) is the tendency of a person's positive (or negative) traits in one area to influence our perception of them in other areas. Anecdotally, we see this when children who are usually polite and helpful towards their teacher can 'get away' with more than other children who may not be so helpful.

It is important to say that having unconscious biases is not in itself a bad thing. The problem arises when our unconscious biases lead us to treat people differently, as in the example of the halo effect (or the 'horn effect' for negative bias).

Unconscious bias and gender

In primary schools, unconscious bias can lead us to treat children differently without realising that we are doing so. This is particularly the case with gender. As teachers, we have grown up in a gendered world and developed our own biases around gender unconsciously.

One way in which these unconscious biases might be seen is in how often we talk to children in our class. A recent research study in Sweden (Eliasson, Sørensen and Karlsson, 2016) found that secondary school teachers talked more with boys than with girls (Table 1). This was seen when the conversation was general classroom talk such as instructions and behaviour prompts. However, it was also seen when the talk was science-related. This means that the girls were potentially missing out on opportunities to strengthen their understanding of science. Notice also that the difference in treatment also happened with female teachers.

As well as how much teachers talk to children, what teachers say can also be affected by unconscious bias. A good example of this is shown in the

Table 1 The percentage of verbal interactions between teachers and students depending on the gender of the teacher and the student (adapted from Eliasson *et al.*, 2016)

	Talking to whole class (%)	Talking to boys (%)	Talking to girls (%)
General talk:			
– male teacher	67.1	20.7	12.2
– female teacher	64.4	20.6	15.0
Only science talk:			
– male teacher	50.5	31.9	17.6
– female teacher	42.9	31.7	25.4

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Figure 1 The analysis tools used within the classroom (available from https://nustem.uk/cite)

video *No more girls and boys* (Real Families, 2018) where Graham André, the classroom teacher, called the boys in his class 'mate' and the girls 'love'. Think about your classroom: do you ask for 'strong lads' to help carry things, or praise the girls' work for neatness rather than content?

Taking action to reduce gender bias

Northumbria University, in Newcastle upon Tyne in the North East of England, and the North East Local Enterprise Partnership (NELEP) have been working on a project with trainee teachers and their mentors to help them explore gendered unconscious bias in primary schools, particularly in the context of careers-related learning. As part of this project we provided three tools: a classroom interactions analysis tool, a literature content analysis tool and a display content analysis tool (Figure 1).

The classroom interactions tool allows trainee teachers (and others) to observe the pattern of classroom interactions or to have others observe their own interactions. Reflecting on what they found, helped them to become consciously aware of possible gender biases, and propose strategies to counteract these biases in their teaching.

The Improving Gender Balance and Equalities project in Scotland (IGBE, 2020) has produced action guides for teachers and schools (including early-years settings, primary and secondary) to reduce gender-related unconscious bias. These can be summed up as:

- **Be consciously aware of the issue and discuss it with colleagues.**
- **Think about the choice of language you use and the underlying messages it sends.**
- **Think carefully about the messages of lesson materials, literature, displays, etc.**
- **Be aware of the choices you make regarding classroom management.**

Conclusion

Ultimately, we all have unconscious biases, but we can all do more to reduce the effect on the children in our classrooms. Reducing the effects of unconscious bias could have long-term consequences for our pupils. From a very early age children make strongly gendered choices about possible careers (Davenport and Shimwell, 2019). By providing a more gender-inclusive classroom, we can help children 'keep their options open' about what they might want to do when they enter the workforce.

Carol Davenport is a senior lecturer at Northumbria University and runs the NUSTEM group, which works with primary and secondary schools in some of the most deprived areas of the North East of England, supporting students and their teachers and parents to make informed decisions about careers.
Email: carol.davenport@northumbria.ac.uk
Twitter: @DrDav

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